Measurement of the GPS Transmitting Antenna Phase Variations

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Today, accurate G1'S receivers and sophisticated differential post-processing software enable cm-level precision for bot h global base] i nes and satellite orbit determination. Now that the GPS system is being used to provide positioning three orders of magnitude better than the system specification of 15 meters, it is important to quantify the GPS satellite parameters that affect differential positioning to a commensurate level of accuracy.

This paper will describe tests being conducted on a GPS transmit antenna using techniques developed to calibrate the TOPEX/Poseiden GPS receive antenna at the Jet Propulsion Laboratory. These tests will be used to determine the variation of the phase delay of the GPS transmitting antenna as a function of the angle of transmission. The test objectives, and intermediate results will be described, as w c]] as the importance of antenna results in the context of total GPS performance.

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